

## Chapter 15

### Industrial Hygiene; General



#### Purpose:

Chapters 15 and 16 supplement DOE 5480.10, "Contractor Industrial Hygiene Program," of 6-26-85 and DOE O 440.1, "Worker Protection Management DOE Federal and Contractor Employees," of 6/27/95; establishes additional requirements; and provides additional direction for implementation of an Industrial Hygiene (IH) program for the U.S. Department of Energy (DOE), Richland Operations Office (RL) and RL Contractors.



#### Scope:

This chapter addresses the following topics in the Industrial Hygiene Program:

- ❖ Application
- ❖ Cancellation
- ❖ Definitions
- ❖ Responsibilities
- ❖ Mandatory Standards/Guides
- ❖ References
- ❖ Related Chapters
- ❖ Attachments



#### Application:

The provisions of this Order are applicable to RL and RL Contractors.



#### Cancellation:

RL 5480.10A, Industrial Hygiene Program, of 6-20-88.



#### Definitions:

1. Acronyms:
  - ACGIH - American Conference of Governmental Industrial Hygienist
  - ALARA - As Low As Reasonably Achievable
  - AMS - Assistant Manager for Safety
  - ASHRAE - American Society of Heating, Refrigerating, and Air-Conditioning Engineers
  - AWWA - American Water Works Association
  - CGA - USED BUT NOT SPELLED OUT
  - DCDA - USED BUT NOT SPELLED OUT



DCVA - Double Check Valve Assembly  
DOE - Department of Energy  
FPMR - Federal Property Management Regulations  
GOCO - Government-Owned, Contractor-Operated  
HASP - Health and Safety Plan  
HEPA - High Efficiency Particulate Air  
HWSMC - Hazardous Waste Site Management Contractor  
IARC - International Agency for Research or Cancer  
IDLH - Immediately Dangerous to Life or Health  
IH - Industrial Hygiene  
JSA - Job Safety Analysis  
MSDS - Material Safety Data Sheets  
NFPA - National Fire Protection Association  
NTP - National Toxicology Program  
OSHA - Occupational Safety and Health Standards  
PAPR - Powered Air-Purifying Respirator  
PJSP - Pre-Job Safety Plans  
PVB - Pressure Vacuum Breaker  
RCG - Radioactivity Concentration Guide  
RL - Richland Operations Office  
RPBA - Reduced-Pressure Principle Backflow Prevention Assembly  
SO - Site Safety Officer  
TLV - threshold limit value  
TWA - time-weighted average  
WAC - Washington Administrative Code

2. Definition of Terms:

- a) Competent Person or Abatement (Asbestos) Supervisor is an individual who is designated and certified by the Washington State Department of Labor and Industries to supervise an asbestos project.
- b) Hazardous Materials are any substances which meet the definition as provided by:
  - (1) The National Fire Protection Association (NFPA), Fire Protection Guide for establishment of a material or chemical which has a rating of 3 or 4 in any hazard categories, or if special hazards or considerations are identified; or
  - (2) The OSHA Act considers any biological agent and other disease-causing agent which after release into the environment and upon exposure, ingestion, inhalation or assimilation into any person, either directly from the food chain, will be or may reasonable be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic



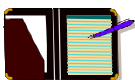


- g) Suspect Human Carcinogen is any chemical substance, or any substance associated with chemical processes, which is suspected of inducing cancer based on:
- (1) Epidemiological evidence exclusive of chemical reports of single cases; or
  - (2) Demonstration of carcinogenesis in one or more animal species by appropriate methods. Chemicals are listed in ACGIH, "Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment;" or
  - (3) Chemicals or agents listed by the International Agency for Research or Cancer (IARC) and National Toxicology Program (NTP).
- h) Wet Method, as it relates to asbestos control, is to handle, mix, apply, remove, cut, score, or otherwise work in a wet state sufficient to prevent the emission of airborne asbestos fibers in excess of current exposure limits.

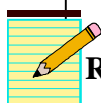


#### **Responsibilities:**

1. Occupational Medical Services Contractor shall:
  - a) Provide the Occupational Medical Services of the IH Program.
  - b) Provide Technical IH Support services, e.g., air and water monitoring; evaluation, recommendation, and training in the use of respiratory devices as requested by RL and RL Contractors;
  - c) IH analytical laboratory; work environment surveys; noise and hearing conservation; maintenance of permanent records of personal exposure data and monitoring (NOTE: RL Contractors must maintain adequate exposure records); maintenance of Hanford Site MSDS System, etc.
  - d) Provide consultant services to RL Contractors.
2. RL Contractors shall:
  - a) Conduct an effective program to educate employees to the potential health hazards in their work environment, the control measures, and the protection necessary to reduce those risks to acceptable levels.
  - b) Inform employees of health hazards and the results from monitoring of harmful toxic or physical agents in the work environment, and document this action.



- c) Ensure that adequate resources are committed for training and professional development of the IH staff.
- d) Evaluate the effectiveness of proposed environmental control equipment and approve related operational procedures.
- e) Perform evaluations of the impact on the work environment of modifications, or process changes on new facilities, while still in the planning stage.
- f) Use the industrial hygienist's professional judgment and experience where no code, standard, or regulation exists regarding hazardous materials or physical agents.



#### **Record keeping:**

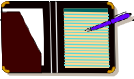
1. Survey Records. Area walk-through surveys which note deficiencies in the control of hazards, procedures, violations, etc., shall be documented as to what was observed and actions taken. Deficiencies identified in formal compliance inspections conducted by RL shall be documented in accordance with 29 CFR 1960 or DOE O 440.1. Records of the inspections, appraisals, complaints, findings, observations, actions, procedures, etc., shall be maintained.
2. Records Maintenance. Records shall be maintained in accordance with DOE requirements. Records of employee toxic and physical agent exposure and potential personal exposure data shall be maintained by RL Contractors. QSH Medical Contractor shall maintain centralized record retention and provide RL and RL Contractors with the results of monitoring efforts.



#### **Mandatory Standards/Guides:**

In addition to the standards and guides provided in DOE 5480.4, the following standards and guides are to be used at Hanford.

- ❖ Federal Property Management Regulations (FPMR), Subchapter D, Part 101-20.116-2, Lighting Conservation Policies and Procedures.
- ❖ ANSI Z4.1, Sanitation in Places of Employment, Minimum Requirements for, current edition.
- ❖ Washington State Requirements for Asbestos Control Programs (WAC 296-62-077 AND 296-55).



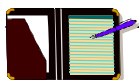
#### References:

- ❖ DOE 5480.4, Environmental Protection, Safety And Health Protection Standard, of 5-15-84, which establishes requirements for the application of the Mandatory Standards.
- ❖ Military Standard 282, Filter Units, Protective Clothing; Gas Masks Components and Related Products; Performance Test Method's, which establishes purchase requirement and test specifications for filter units relating to use of respiratory protective devices.
- ❖ 30 CFR, Part II, Respiratory Protective Devices; Tests for Permissibility; Fees; which establishes procedures and requirements for filing application, schedule of fees, issuance of certificates, and establishes minimum testing requirements for respiratory protective devices during entry into and escape from hazardous atmospheres.
- ❖ DOE-HQ Environmental, Health and Safety Bulletin No. 306, Revised Minimal Specifications for the High Efficiency Particulate Air (HEPA) filters, of 3-31-71, which establishes purchase requirements for HEPA filters and meets Military Specifications MIL-F-51068 (or most current) and directs DOE Contractors to purchase approved units.
- ❖ DOE 6430.1A, General Design Criteria, of 4-6-89, which, establishes minimum requirements for acquisition of the Departments facilities and to establish responsibilities and authorities for the development and maintenance of these criteria.
- ❖ DOE O 440.1, "Worker Protection Management DOE Federal and Contractor Employees." which establish requirements and procedures to assure the occupational safety and health standards are implemented.
- ❖ Title 29 CFR 1910, Occupational Safety and Health Standards (OSHA) which are the OSHA Standards for general industry.



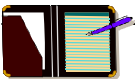
#### Related Chapters:

- ❖ Chapter 1, "Organization and Program for Operational Safety; General."
- ❖ Chapter 2, "Codes and Standards."
- ❖ Chapter 3, "OSHA"
- ❖ Chapter 5, "Construction and Demolition."
- ❖ Chapter 16, "Industrial Hygiene; Factors."
- ❖ Chapter 17, "Safety Inspection Checklist."



**Attachments:**

- ❖ Attachment 1: *Survey Records*
- ❖ Attachment 2: *Employee Exposure Records*



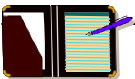
**Attachment 1:**  
*Survey Records*



Please insert a copy of applicable records following this page or indicate the location of these records on the form below.

<b>Facility Name:</b>		
<b>Records Location:</b>	<b>Initial:</b>	<b>Date:</b>





**Attachment 2:**  
*Employee Exposure Records*



Please insert a copy of applicable records following this page or indicate the location of these records on the form below.

<b>Facility Name:</b>		
<b>Records Location:</b>	<b>Initial:</b>	<b>Date:</b>